Troubleshooting Cisco 1800 Series Routers (Modular)

If you encounter problems with your Cisco 1800 series integrated services router (modular), the information in this document can help you isolate problems in the router or eliminate the router as the source of the problem.

This document contains the following sections:

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Note To troubleshoot interface cards, refer to the online *Cisco Interface Cards Installation Guide*.

If you cannot locate the source of the problem, contact a Cisco customer service representative for information on how to proceed. For technical support information, refer to the "Obtaining Technical Assistance" section on page 10 of the "Introduction to Cisco 1800 Series Routers (Modular) Hardware Documentation" document. Before you call, have the following information ready:

- Chassis type and serial number
- Maintenance agreement or warranty information
- Type of software and version number
- Date you received the router
- Brief description of the problem
- Brief explanation of the steps you have taken to isolate the problem

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Problem Solving

The key to problem solving is to isolate the problem to a specific subsystem by comparing what the router is doing to what it should be doing.

The LEDs on the router aid you in determining router performance and operation. The LEDs are described in the "Reading LEDs" section on page 4.

When solving problems, consider the following router subsystems:

- Power and cooling systems—External power source, power cable, router power supply, circuit breaker, and router fan. Also check for inadequate ventilation or air circulation.
- Interface cards—LEDs on the interface cards help identify a failure.
- Cables—External cables that connect the router to the network.

Troubleshooting the Power and Cooling Systems

Both the system LED and the fans can help you troubleshoot a power problem. Check the following items to help isolate the problem:

Normal Indications

With the power switch on, the normal indications are:

- SYS PWR LED on green and continuous
- Fan operating

Fault Indications

Check the following symptoms to locate or eliminate faults in the power and cooling systems:

- With the power switch on, is the SYS PWR LED on?
  - If the LED is green and continuous, the router is receiving power and is functional.
  - If the LED is off, check the power source and power cable.
- With the power switch on and the SYS PWR LED on and green, does the fan operate?
  - If no, check the fan.
  - If yes, the power system is functioning.
- With the power switch on and the SYS PWR LED off, does the fan operate?
  - If yes, the router is receiving power. The fan is connected directly to the DC outputs of the power supply.
  - If no, check the power source and power cable.
- Does the router shut down after being on a short time?
  - Check for an environmentally induced shutdown. See the next section, "Environmental Reporting Features."
  - Check the environmental site requirements in the "General Site Requirements" section on page 3 of the "Preinstallation Requirements and Planning for Cisco 1800 Series Routers (Modular)" document.

  - Check for a power supply failure by inspecting the SYS PWR LED on the front panel. If it is green, the power supply is functional.
- Router partially boots, but LEDs do not go on.
  - Check for a power supply failure by inspecting the SYS PWR LED on the front panel of the router. If the SYS PWR LED is blinking or continuously green, the power supply is functional.
  - If the SYS PWR LED is not on, refer to the "Cisco One-Year Limited Hardware Warranty Terms" section of the "Introduction to Cisco 1800 Series Routers (Modular) Hardware Documentation" document for warranty information, or contact customer service.

Environmental Reporting Features

If the router is operating at an abnormally high temperature, consider the following causes:

- Fan failure
- Air conditioner failure in the room
- Air blockage to cooling vents

Take steps to correct the problem. Refer to the "Preinstallation Requirements and Planning for Cisco 1800 Series Routers (Modular)" document. See the "Site Environment" section on page 4.

Troubleshooting Cables, Connections, and Interface Cards

Network problems can be caused by cables, cable connections, or interface cards, or by external devices such as a modem, transceiver, hub, wall jack, WAN interface, or terminal. Check for the following symptoms to help isolate the problem.

- Card is not recognized by the router.
  - Make sure that the card is firmly seated in its slot.
  - Check the LEDs on the card. Each card has its own set of LEDs. For information on these LEDs, refer to the online *Cisco Interface Cards Installation Guide*.
  - Make sure that you have a version of Cisco IOS software that supports the card. Check the *Cisco 1800 Series Cards and Modules* online document for software requirements for the interface card.
- Card is recognized, but interface ports do not initialize.
  - Make sure that the card is firmly seated in its slot.
  - Check external cable connections.
  - Make sure that you have a version of Cisco IOS software that supports the card. Check the software requirements for the affected card, which can be found in the configuration note for the card.
- Router does not boot properly, or constantly or intermittently reboots.
  - Make sure that the card is firmly seated in its slot.
  - Check the router chassis or software.

- Router boots, but the console screen is frozen.
  - Check the external console connection.
  - Verify that the parameters for your terminal are set as follows:

    (a) The same data rate as configured for the router (9600 baud is the default)

    (b) 8 data bits

    (c) 1 stop bit

    (d) No parity generated or checked
- Router powers on and boots only when a particular card is removed.
  - Check the card. Refer to the "Cisco One-Year Limited Hardware Warranty Terms" section on page 8 and the "Obtaining Technical Assistance" section on page 10 of the "Introduction to Cisco 1800 Series Routers (Modular) Hardware Documentation" document for warranty and customer service contact information.
- Router powers on and boots only when a particular cable is disconnected.
  - There may be a problem with the card or cable. Refer to the "Cisco One-Year Limited Hardware Warranty Terms" and the "Obtaining Technical Assistance" sections of the "Introduction to Cisco 1800 Series Routers (Modular) Hardware Documentation" document for warranty and customer service contact information.

Reading LEDs

The LEDs on the router enable you to determine router performance and operation. The System Power (SYS PWR) LED and the System Activity (SYS ACT) LED are on the front panel; all the other LEDs are on the back panel.

Table 1 LED Indicators on Cisco 1800 Series Routers

LED Indicator	State	Meaning	Possible Causes and Corrective Actions
SYS PWR	Off	No output from the internal power supply.	Power not switched on at the router. Power not available from source. Faulty input power wires or connections. Failed power supply in the router. To replace the internal power supply, call your Cisco technical support representative.
	Solid green	Router is receiving power, and the internal power supply is functional.	Normal indication. No action is required.
	Blinking green	During bootup, router is booting up normally.	Normal indication. No action is required.
		After bootup, router is operating in ROM monitor mode.	Refer to the router rebooting and ROM monitor information in the Cisco 1800 series software configuration documentation.
SYS ACT	Off	No packet transfers are occurring.	Interface card connections are not functional. Router is not configured properly. Check configuration, and make corrections as necessary.
	Blinking	System is actively transferring packets and monitoring internal activity	Normal indication. No action is required.
CF (CompactFlash Busy)	Off	The CompactFlash memory card is not being accessed.	Normal indication. No action is required. It is okay to remove the CompactFlash memory card if the CF LED remains off.
	Blinking green	The CompactFlash memory card is being accessed.	Normal indication. No action is required. ⚠ **Caution** Do not remove the CompactFlash memory card while it is being accessed.
FDX	Off	Fast Ethernet port next to the LED is operating in half-duplex mode.	Indication is for information only.
	Solid green	Fast Ethernet port next to the LED is operating in full-duplex mode.	Indication is for information only.

Table 1 LED Indicators on Cisco 1800 Series Routers (Continued)

LED Indicator	State	Meaning	Possible Causes and Corrective Actions
100	Off	Fast Ethernet port next to the LED is operating at 10 Mbps.	Indication is for information only.
	Solid green	Fast Ethernet port next to the LED is operating at 100 Mbps.	Indication is for information only.
Link	Off	Fast Ethernet link is not established at the Ethernet port next to the LED.	Ethernet is not active or is not connected. Check Ethernet connections. Router is not configured properly. Check configuration, and make corrections as necessary.
	Solid green	FastEthernet link is established at the Ethernet port next to the LED.	Normal indication. No action is required.
AIM (Advanced integration module)	Off	No AIM is installed.	Indication is for information only.
	Solid green	AIM is recognizedby the router and is initialized.	Normal indication. No action is required.

System Messages

This section describes system error and recovery messages that may appear when a Cisco 1800 series router is operated. The Cisco IOS software displays system error and recovery messages on an external device console terminal screen. (For more information, see the "Connecting to the Console Port" section on page 4 of the "Cable Connection Procedures for Cisco 1800 Series Routers (Modular)" document.)

The terminal should display one of the following prompts:

`Router>` (indicates the user EXEC command mode)

or

`Router#` (indicates the privileged EXEC command mode)

The Cisco IOS software checks the system condition once every 30 seconds. If a condition still exists, the error message is displayed again; if the error condition has cleared, a recovery message is displayed.

Table 2 describes some of the most common system error and recovery messages.

Table 2 System Messages

Error Message	Explanantion
`%ENVMON-3-FAN_OK: Fan <fan-number> functional now`	Explanation: The cooling fan within the chassis is working.
`%ENVMON-3-FAN_FAIL: Fan <fan-number> is malfunctioning`	Explanation: The cooling fan within the chassis is not working.

Table 2 System Messages (Continued)

Error Message	Explanantion
%CFG-3-CARD_NOT_SUPPORTED: Slot <n>. <Card identification from cookie, including at least card type, version, revision, and serial number>	Explanation: The card found is not recognized or is not supported in the specified slot.
%CFG-6-UNKNOWN_AIM: AIM module in AIM slot <n> is not supported by this IOS image. Card info: <all TLV PEP data from cookie>	Explanation: This Cisco IOS image does not have the driver code for the AIM discovered in AIM slot.

Recovering a Lost Password

You can recover a lost enable password, but an enable secret password is encrypted and is not recoverable. If you lose an enable secret password that is configured on your router, you can replace it with a new enable secret password.

For password recovery and replacement procedures, refer to the *Password Recovery Procedures* document on Cisco.com

More Troubleshooting Help

For online troubleshooting help, go to the TAC Case Collection Tool and Troubleshooting Assistant.

You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

For additional troubleshooting tools and information, go to the Troubleshooting Links index.

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